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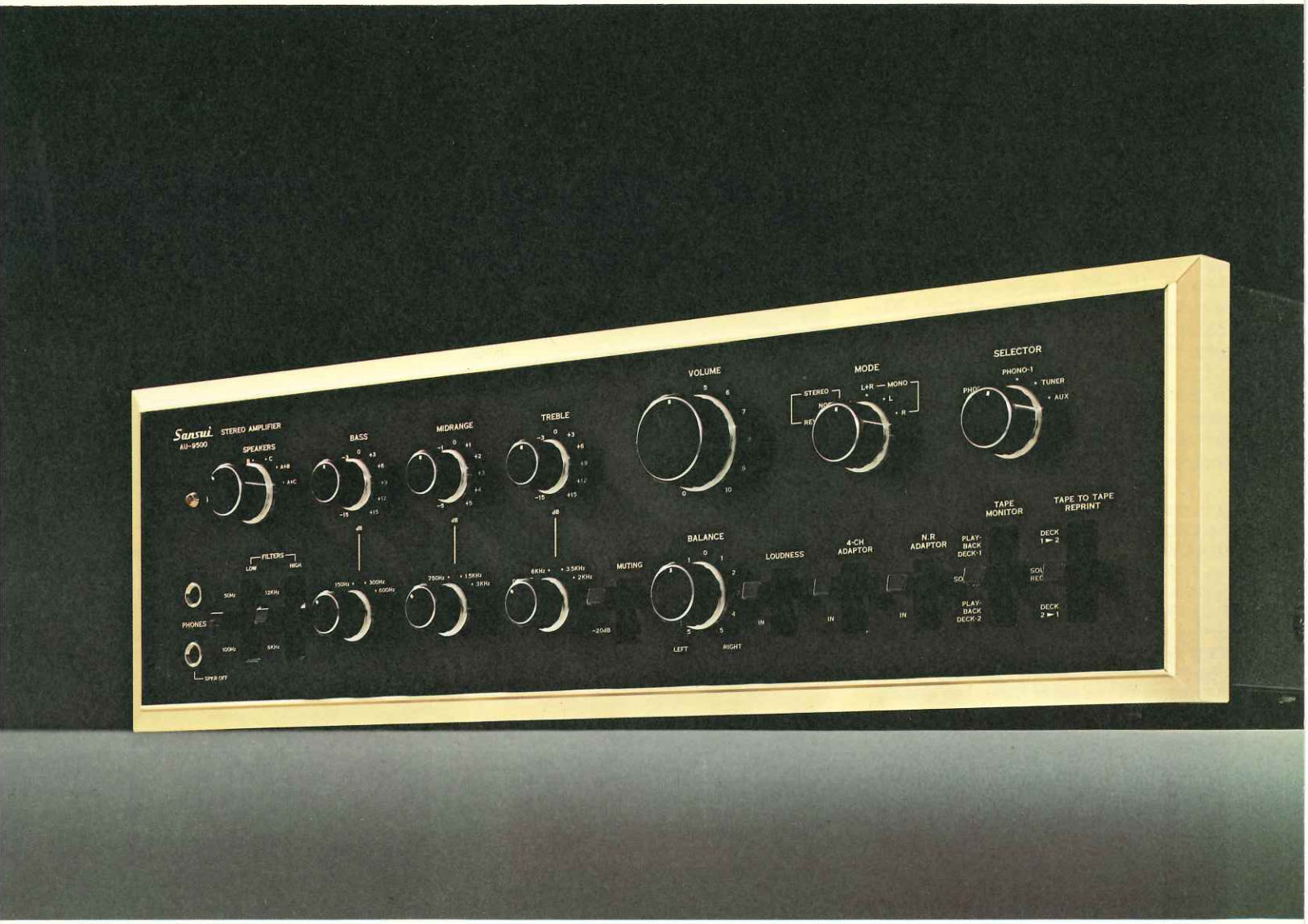
SANSUI AU9500



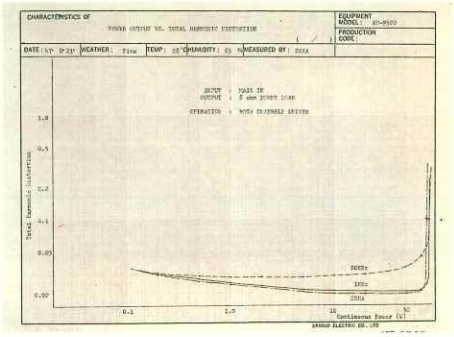
SANSUI AU-9500 STEREO AMPLIFIER By far the most refined and advanced of all the Sansui AU series of amplifiers, the AU-9500 takes the art of sound reproduction to a new high with its uncompromising emphasis on tonal quality, operating ease, reliability and appearance. Assembled with the kind of painstaking care that has long made Sansui famous, and with only the latest solid state circuitry, this integrated amplifier adopts the ultimate in amplifier design—an all-stage direct-coupled OCL pure complementary parallel push-pull circuitry that delivers 75 watts per channel in continuous output (into 8 ohms, 20—20,000Hz, both channels driven) with total harmonic distortion of less than 0.1%. There is a twin dual power supply system to drive each channel separately and an advanced parallel push-pull output circuit that contributes to reduced distortion, along with total protector circuitry for your power transistors and speakers. No amount of design capability has been spared to enhance the versatility and convenience of the AU-9500, and thus broaden your listening enjoyment. Sansui has included a wide dynamic range equalizer (phono overload 840mV p-p) with superior transient response, along with rotary switch type triple tone controls for unusually precise tonal adjustments. There are low/high filters, 4-channel adaptor inputs and switch, plus inputs for the addition of a noise reduction adaptor for hiss-free tape recording and playback. Versatility is naturally first-rate, owing to the fact that the AU-9500 connects up to three tape decks, offers tape-to-tape reprint facilities, and even may be used in a multi-amplifier system since the preamplifier and power amplifier sections are separately usable. All in all, the AU-9500 is the very top-of-the-line Sansui amplifier for the audiophile who refuses to accept second best. As a handsome blend of quality, solid state technology and tonal perfection, the AU-9500 has no peer. And, not surprising, since it's from the audio components-only specialist. Sansui.

Sansui

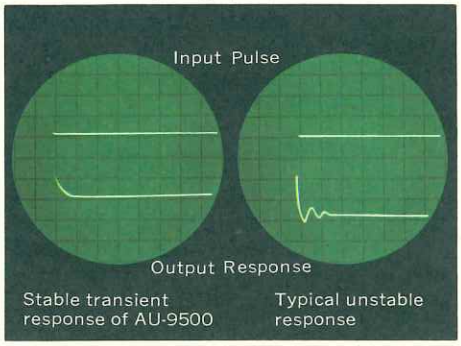
THE PINNACLE OF PERFECTION, LESS-THAN-0.1% DISTORTION AT ANY OUTPUT LEVEL, TWIN DUAL POWER SUPPLIES FOR PRODIGIOUS POWER

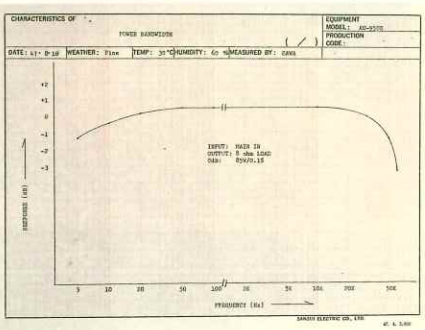
By far the most refined and advanced of all the AU series of amplifiers, the AU-9500 takes the art of sound reproduction to a new high with its uncompromising emphasis on tonal quality, operating ease, reliability and appearance. Assembled with painstaking care and with only the latest solid state circuitry, this integrated amplifier adopts the ultimate in amplifier design—an all-stage direct-coupled OCL pure complementary parallel push-pull circuitry-that delivers 75 watts per channel in continuous output (into 8 ohms, 20—20,000Hz, both channels driven) with total harmonic distortion of less than 0.1%. For the audiophile who refuses to accept second best, the AU-9500 offers a distinctive level of quality and perfection. From Sansui, the audio components-only specialist.

SUPERB TONAL QUALITY AND STABILITY FROM T.H.D. LESS THAN 0.1% (5—40,000Hz): Highly cognizant of the effect of any form of distortion on hi-fi sound reproduction, Sansui has taken special care to design the AU-9500 so that all kinds of distortion are held below an imperceptible 0.1% over a super wide bandwidth. This includes a range from the very deep lows all the way up to the super highs (see graphs),

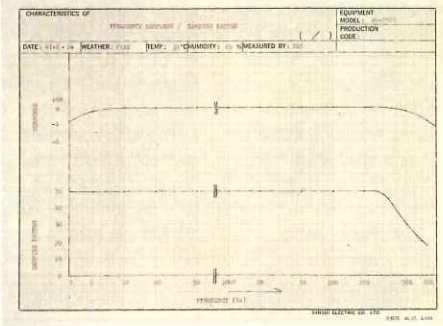


and, of course, the usual audio spectrum. The AU-9500's power amplifier section is a splendid example of Sansui workmanship. Its 2-stage differential amplifier, constructed of carefully selected low noise transistors, and its all-stage direct-coupled output-capacitor-less (OCL) circuitry combine to apply stable negative feedback over a very wide bandwidth and control *all* forms of distortion. This excellence of design was made possible by careful analyses of the waveform of the distortion content in the audio signal, and of the ratio of different harmonic components in the amplifier's total harmonic distortion — all of which enabled Sansui to single out the odd-harmonic distortion content, which most adversely affects the tonal quality, and practically do away with it. Moreover, Sansui has designed a circuit system of exceptional reliability, complete with thorough phase compensation in each and every amplifier stage, to achieve greater stability throughout the amplifier, and to enhance the unit's tonal quality when it is actually amplifying audio signals. This circuitry system has also been tested and proven through numerous examinations, as well as careful analyses of all data obtained (see graphs).

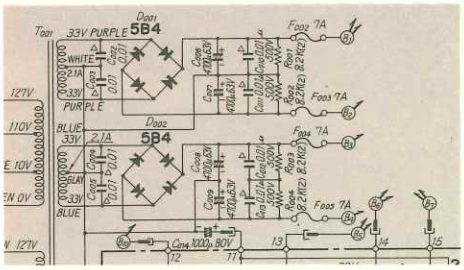




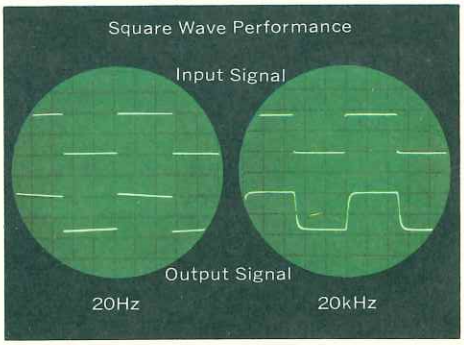
TWIN DUAL POWER SUPPLY SYSTEM DRIVES EACH CHANNEL SEPARATELY: The AU-9500 boasts an extremely well-regulated power supply circuit constructed around a high-capacity power transformer. Separate winding is done for each left and right channel and the rectifier circuit that converts AC to DC, employs no less than four large 4,700μF capacitors in a twin power supply system to supply power to both left and right channels independently.

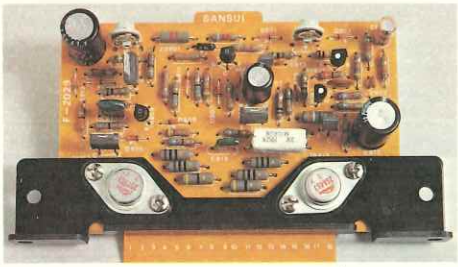


In addition, the power supply for each channel adopts a plus/minus dual supply system that enables the OCL (output-capacitor-less) design, and improves the amplifier's important damping factor, frequency response, distortion and other key characteristics. You'll discover, of course, that the power transistors are always driven with power to spare. Just as important, another separate power supply of higher voltage than the final stage is provided for the pre-driver. And this, plus the fact that the drive transistors are Darlington-connected, ensures stable power output against load impedance fluctuations.



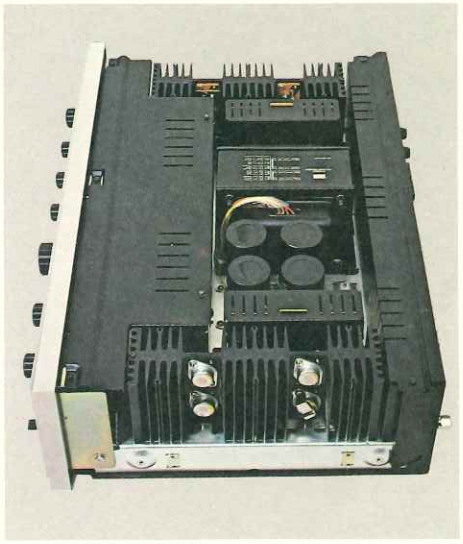
PARALLEL PUSH-PULL OUTPUT CIRCUIT FOR REDUCED DISTORTION: The AU-9500 incorporates and advanced parallel push-pull circuit for its output stage, with four power transistors connected in parallel for each channel. Compared with the conventional push-pull output circuit, this feature offers the advantage of requiring only half the usual collector current for each power transistor. This then means that transistors can be made to operate in the region of their current amplification characteristic where they show excellent linearity. And since Sansui uses only the very finest transistors

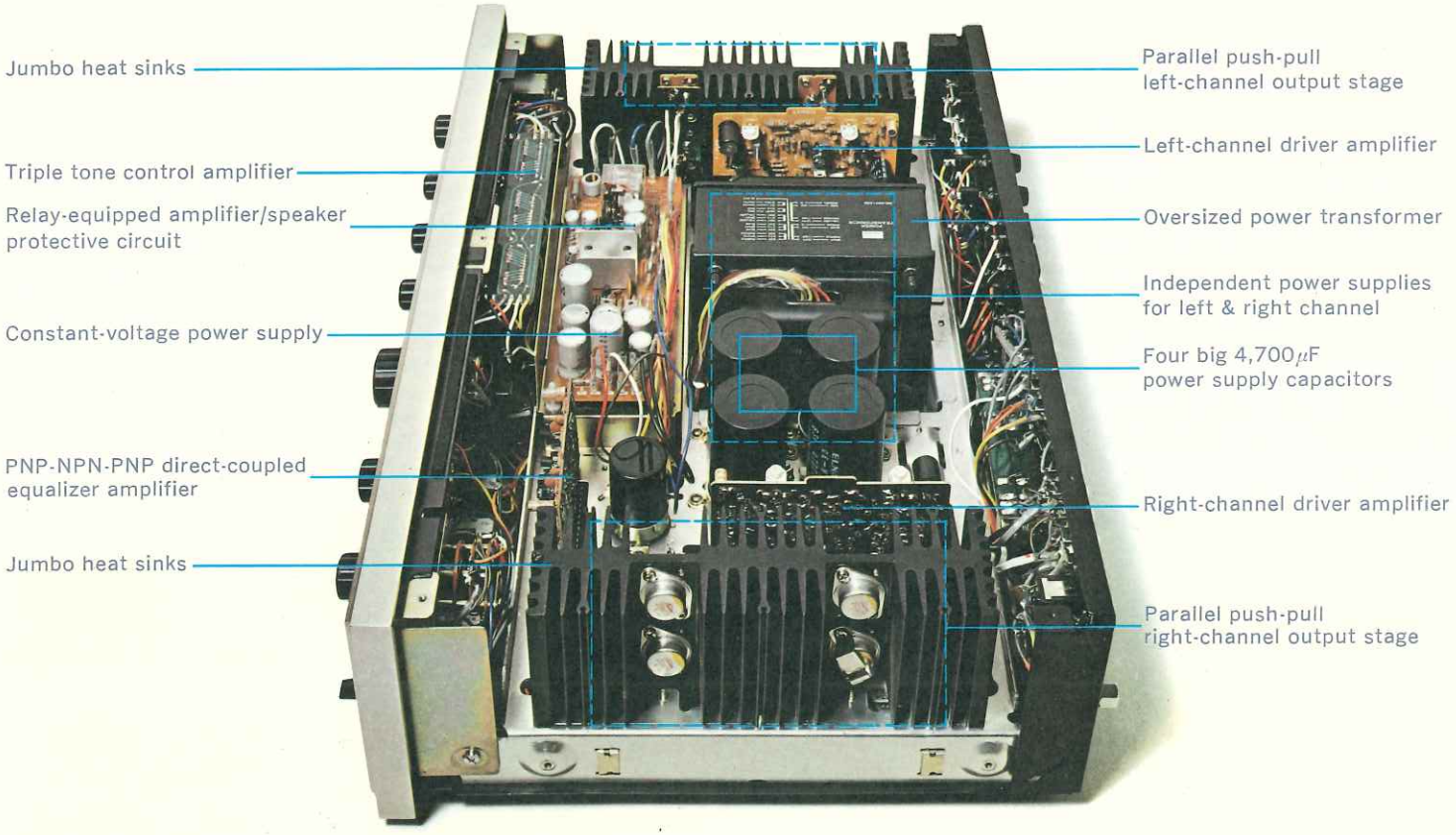




with matched performance characteristics, the amplifier is able to accomplish its job with only minimal distortion. Because the power transistors thus maintain excellent current amplification linearity for varying levels of input signals, the AU-9500's new twin-dual power supply system with quiescent current adjustor using a specialized transistor and exceptionally well-regulated power transformer drives even low impedance loads (such as 4 ohm speakers) with sufficient stability in the very wide frequency range. Its damping factor curve is thus hardly a curve at all, but rather stretches flat across the entire audio spectrum and beyond its high and low ends.

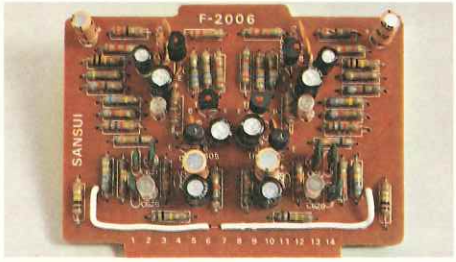
COMPLETE PROTECTOR CIRCUITRY: Triple protection of the power transistors and your valuable speakers is guaranteed by three factors: (1) An electronic protector circuit combining relays, transistors and diodes, (2) four quick-acting protective fuses, and (3) a current limiter circuit that prevents excessive current from entering the driver and power transistors in the event of a short-circuit or other irregular conditions. The electronic protector circuit alone serves as a power supply muting circuit, providing several seconds of delay between the turning on of the power switch and the actual operation of the speakers. It thus also eliminates unpleasant "pop" noise and further contributes to overall speaker protection.



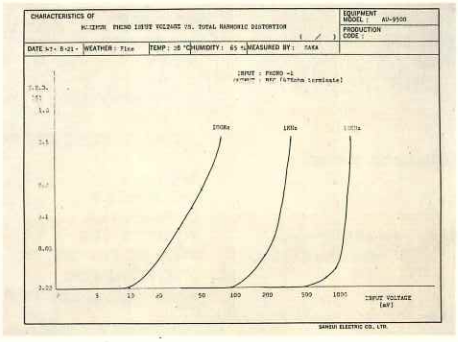

Jumbo heat sinks
Triple tone control amplifier
Relay-equipped amplifier/speaker protective circuit
Constant-voltage power supply
PNP-NPN-PNP direct-coupled equalizer amplifier
Jumbo heat sinks
Parallel push-pull left-channel output stage
Left-channel driver amplifier
Oversized power transformer
Independent power supplies for left & right channel
Four big 4,700μF power supply capacitors
Right-channel driver amplifier
Parallel push-pull right-channel output stage

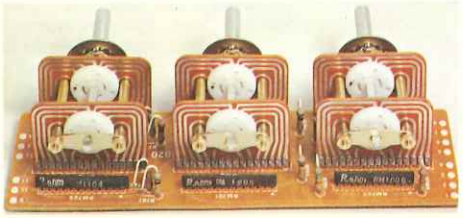
SUPREME VERSATILITY, EXTRA CONVENIENCE FOR ENHANCED STEREO ENJOYMENT

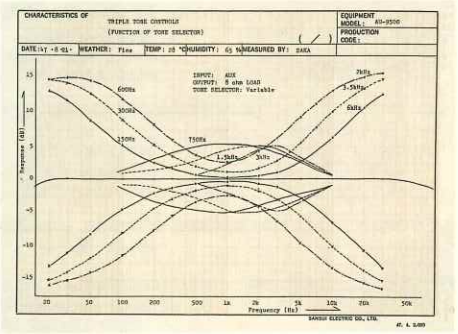
WIDE DYNAMIC-RANGE EQUALIZER WITH OUTSTANDING TRANSIENT RESPONSE: The overload margin of a phono equalizer circuit is just as important as its signal-to-noise ratio and distortion factor. You may even consider it a more critical factor since once a signal clips at its highest peaks it will never be recovered. The equalizer circuit of the AU-9500 is the direct-coupled three-stage design where three carefully selected low noise transistors are arranged in an anisotropic PNP-NPN-PNP combination for minimal noise and maximum dynamic range. The bottom of the dynamic range is kept low by the use of a constant-voltage power supply, a ripple filter with large 1,000μF capacitor and special low-noise transistors in the equalizer. The upper limit of the dynamic range is extremely high, owing to the large 48VDC voltage used to energize the equalizer, enabling it to accept up to 300mV RMS in phono input (1kHz, THD 0.5%). With the phono input sensitivity rated at 2.5mV, this means a dynamic margin of 120 times, or approximately 42dB, a very extravagant figure for any musical program source. The equalizer as well as the power amplifier are especially designed with attention to their phase margin, generally considered an important index of an amplifier's stability. As a result, the AU-9500 provides a generous phase margin not only over the entire audio spectrum but also beyond its upper and lower limits—in the deep low range and the super high range—under varying load conditions. This in turn permits the amplifier to show excellent transient response to musical signals and assures a transparent, supreme tonal quality. Then, the RIAA equalization is performed by carefully selected transistors, capacitors and resistors with minimal performance variances that keep the equalizer deviation from the RIAA curve within ±0.5dB between 30—15,000Hz.

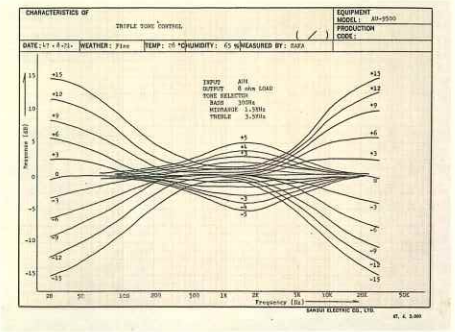


TWO CONVENIENT PHONO INPUT CIRCUITS: Like all quality amplifiers, the AU-9500 has two phono input circuits. But it also has much more. The input impedance of the second input circuit is switchable between 30kΩ, 50kΩ and 100kΩ to match the load resistances of different types of cartridges so that you may use them as they are intended, or to obtain the tonal quality of your preference. The first input circuit has an impedance of 50kΩ, and this matches most popular cartridges.

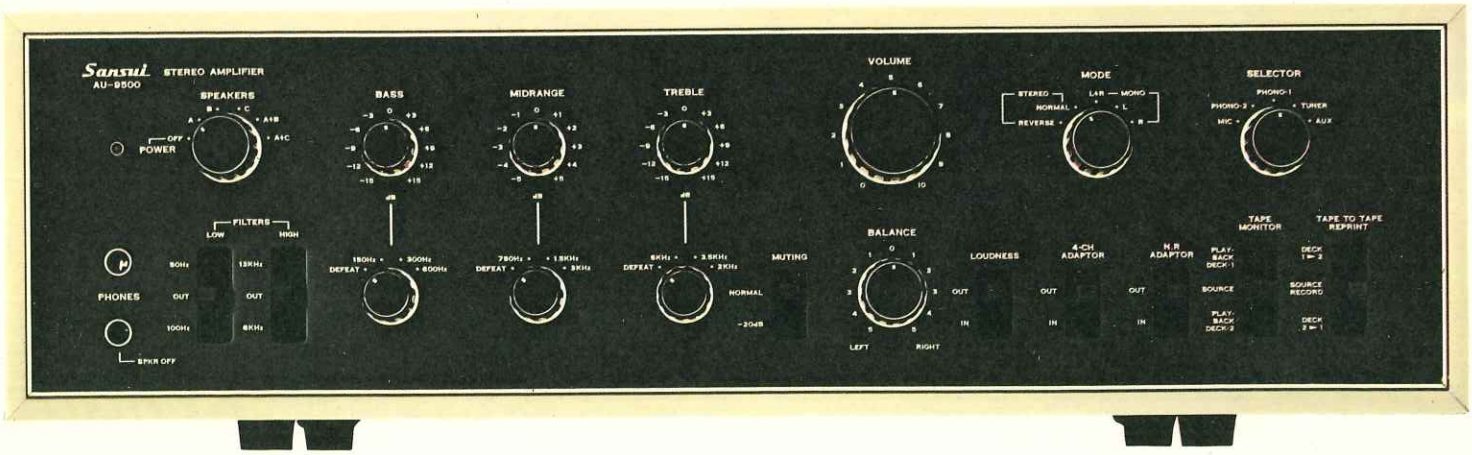






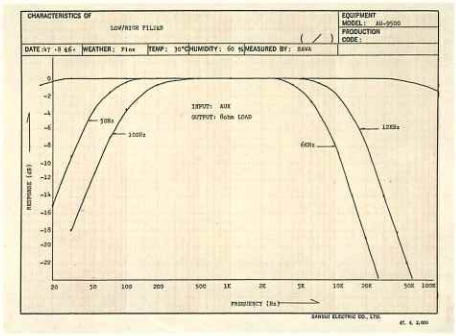


ROTARY SWITCH TYPE TRIPLE TONE CONTROLS FOR PRECISE TONAL ADJUSTMENTS: The AU-9500 uses triple tone controls to provide for extremely close control of the tonal quality over the entire audio spectrum. The BASS and TREBLE tone controls allow adjustments of ±15dB in steps of 3dB each, while the MIDRANGE control permits adjustment up to ±5dB in steps of 1dB each. In addition, each of these controls is provided with a "Tone Selector" that offers you a choice of three turnover/roll-off frequencies plus a DEFEAT position to cancel any individual tone control circuit. What this adds up to is tonal perfection: you may tailor the tonal quality of reproduced sound to the type of program source, the electro-acoustic properties of your speakers, the acoustics of your room and your own musical tastes. The entire tone control amplifier is a negative feedback circuit combining three direct-coupled



stages and two direct-coupled stages for reduced distortion and wide response. The first of the five stages is an expensive FET to attain a higher signal-to-noise ratio as well as accurate and smooth control characteristics regardless of master volume control setting.

SHARP CUTTING LOW/HIGH FILTERS: The low and high filters of the AU-9500 are both exclusive negative feedback active filter circuits with 12dB/oct. cut-off capabilities. They eliminate undesirable motor rumble and surface noise from worn records, if any, without affecting the major part of audible frequencies. Each filter switch allows you the choice of two cut-off frequencies for more precise control of the tonal quality of reproduced sound.



CONNECTS THREE TAPE DECKS, OFFERS TAPE-TO-TAPE REPRINT FACILITIES: AU-9500 is provided with two tape record/play circuits so that you can connect up to two tape decks to record or reproduce with simple flicks of front-panel switches. There is also a TAPE-TO-TAPE REPRINT switch on the front panel to let you copy a recorded tape from one deck to the other. Equally significant, while you copy from tape-to-tape, you can also enjoy other normal amplifier functions such as receiving a radio broadcast, playing a record, etc. If you possess a third tape deck, you may also connect it to the rear-panel 4-CHANNEL ADAPTOR inputs. And there's even more: if you own a *fourth* deck, you may copy a recorded tape from that tape deck connected to AUX inputs to the other three decks. Both tape playback circuits and the AUX input circuits are provided with their own level controls. This means you can match the signal levels among different program source components to save the trouble of having to adjust the sound volume each time you switch to a different program source.

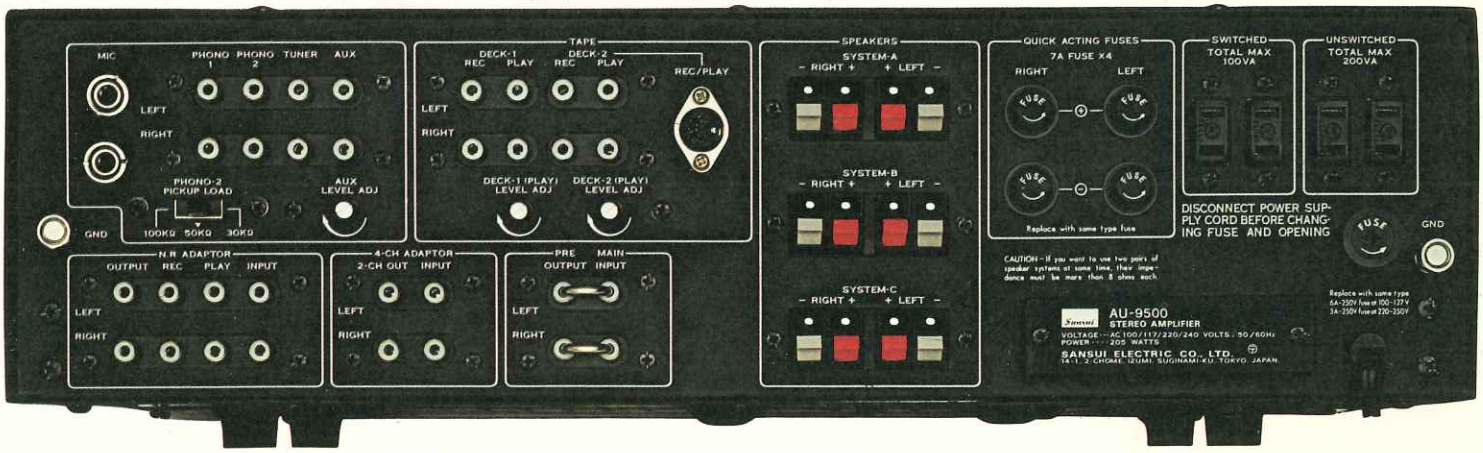
4-CHANNEL ADAPTOR INPUTS AND SWITCH: Should you ever decide to upgrade your AU-9500 to 4-channel status, the unit is ready. Exclusive input terminals are provided on the rear panel to connect an external 4-channel adaptor or 4-channel decoder rear amplifier. A front panel switch turns the instrument adopted or out. If nothing is connected to the terminals, you may connect a third tape deck in this position for recording and playback operations as well as for copying of a recorded tape.

NOISE REDUCTION ADAPTOR INPUTS FOR HISS-FREE RECORDING/PLAYBACK: If your enthusiasm for stereo has taken you to the stage of very advanced equipment, you'll probably want to take advantage of the latest innovation in tape recording and playback — a noise reduction adaptor like the latest Dolby type. The AU-9500, being a very advanced amplifier, offers exclusive inputs and a front-panel switch for such an adaptor so that you may enjoy hiss-free quality recording and playback. By connecting tape decks direct to the amplifier you may select either deck to record or play back through the noise reduction unit.

SEPARATELY USABLE PREAMPLIFIER AND POWER AMPLIFIER: Because both the preamplifier and power amplifier sections of the AU-9500 have such outstanding performance capabilities, Sansui has made them separately usable. This means, if you choose to build a more elaborate multi-amplifier sound reproduction system in the future, that the AU-9500 will adapt for this system. The preamplifier outputs include a transient canceler circuit to absorb pop noise.

COMPLETE SYSTEM OF ACCESSORY CIRCUITS: The AU-9500 is the complete stereo receiver. Among its multiple accessory circuits are the following:

(1) Two microphone jacks which accept standard phone type microphone plugs;
(2) A five-position mode selector (STEREO NORMAL, STEREO REVERSE, MONO L+R, MONO L, MONO R);
(3) Convenient audio muting switch that reduces the volume to one tenth instantly when a telephone rings or door bell chimes and saves you the trouble of fumbling with the volume control to obtain the same volume;
(4) A loudness switch that properly accents the lows and highs when you are listening at low volume levels and compensates for the deficiency of the human hearing mechanism;
(5) A DIN connector that simplifies the connection of a tape deck;
(6) Foolproof one-touch output terminals for connecting up to three pairs of speaker systems. Plus a front-panel rotary control to let you select any pair or a combination of two pairs.
(7) Two headphone jacks, the lower one automatically cuts off the sound from your speakers when a headphone set is inserted for private listening. The upper one lets you listen privately in one room while another person is listening to speakers in another listening room;
(8) Four AC outlets to power your entire stereo system. Two are controlled by the amplifier's power switch;
(9) Two jumbo ground terminals for easy grounding and improved signal-to-noise ratio.



SPECIFICATIONS

POWER OUTPUT (at rated distortion)

CONTINUOUS POWER:	75+75W (8Ω) at 20–20,000Hz (both channels driven)
CONTINUOUS POWER:	115+115W (4Ω) at 1,000Hz 80+80W (8Ω) at 1,000Hz (both channels driven)
CONTINUOUS POWER:	120/120W (4Ω) at 1,000Hz 85/85W (8Ω) at 1,000Hz (each channel driven)
IHF MUSIC POWER:	260W (4Ω) at 1,000Hz 220W (8Ω) at 1,000Hz

TOTAL HARMONIC DISTORTION (AT RATED POWER OUTPUT)

OVERALL (from AUX)	less than 0.1%
PREAMPLIFIER ONLY	less than 0.05%
POWER AMPLIFIER ONLY	less than 0.1%

INTERMODULATION DISTORTION (AT RATED OUTPUT, 70Hz: 7,000Hz=4:1 SMPTE METHOD)

OVERALL (from AUX)	less than 0.1%
PREAMPLIFIER ONLY	less than 0.05%
POWER AMPLIFIER ONLY	less than 0.1%

IHF POWER BANDWIDTH (EACH CHANNEL DRIVEN AT RATED DISTORTION)

5—40,000Hz

FREQUENCY RESPONSE (POWER OUTPUT AT 1 WATT)

PHONO-1 and -2	RIAA curve deviation ±0.5dB (30 to 15,000Hz)
OVERALL (from AUX)	15—40,000Hz +0dB, −1dB (Tone Selectors at DEFEAT)
POWER AMPLIFIER ONLY	3—80,000Hz +0dB, −1dB 15—50,000Hz +0dB, −0.5dB

LOAD IMPEDANCE 4—16Ω

DAMPING FACTOR Approximately 50 into 8Ω dummy load

INPUT SENSITIVITY AND IMPEDANCE (AT 1,000Hz)

PHONO-1	2.5mV (50kΩ)
PHONO-2	2.5mV (30kΩ, 50kΩ, 100kΩ) (maximum input capability 300mV RMS T.H.D. less than 0.5%)
MIC	2.5mV (50kΩ)
TUNER	100mV (50kΩ)
AUX	100mV (50kΩ), adjustable
TAPE MONITOR-1 (pin)	100mV (50kΩ), adjustable
TAPE MONITOR-2 (pin)	100mV (50kΩ), adjustable
TAPE MONITOR-2 (DIN)	100mV (50kΩ)
4-CH ADAPTOR	100mV (50kΩ)
N.R. ADAPTOR	100mV (50kΩ)
POWER AMPLIFIER	800mV (50kΩ)

OUTPUT LEVEL AND IMPEDANCE (AT 1,000Hz)

TAPE REC-1 (pin)	100mV (1.5kΩ)
TAPE REC-2 (pin)	100mV (1.5kΩ)
TAPE REC-2 (DIN)	30mV (70kΩ)
4-CH ADAPTOR	100mV (1.5kΩ)
N.R. ADAPTOR	100mV (1.5kΩ)
PREAMPLIFIER (maximum output level)	0.8V (1.5kΩ) 4.5V (T.H.D. less than 0.5%)

CROSSTALK (RATED OUTPUT AT 1,000Hz)

PHONO-1 and -2	better than 50dB
MIC	better than 50dB
TUNER	better than 50dB
AUX	better than 50dB
POWER AMPLIFIER	better than 60dB

IHF HUM AND NOISE

PHONO-1 and -2	better than 75dB
MIC	better than 65dB
TUNER	better than 85dB
AUX	better than 85dB
POWER AMPLIFIER	better than 100dB

CONTROLS

BASS	+15dB, −15dB at 20Hz (3dB step)
MIDRANGE	+5dB, −5dB at 1,500Hz (1dB step)
TREBLE	+15dB, −15dB at 20,000Hz (3dB step)
TONE SELECTORS	
BASS	DEFEAT, 150Hz, 300Hz, 600Hz
MIDRANGE	DEFEAT, 750Hz, 1,500Hz, 3,000Hz
TREBLE	DEFEAT, 6,000Hz, 3,500Hz, 2,000Hz
LOUDNESS	+10dB at 50Hz, +8dB at 10,000Hz (volume control −30dB)
LOW FILTER	−3dB at 50Hz (12dB/oct) −3dB at 100Hz (12dB/oct)
HIGH FILTER	−3dB at 12,000Hz (12dB/oct) −3dB at 6,000Hz (12dB/oct)

SWITCHES

SELECTOR	MIC, PHONO-1, PHONO-2 TUNER, AUX
MODE	STEREO REVERSE, STEREO NORMAL, MONO L+R, MONO L, MONO R
TAPE MONITOR	PLAYBACK DECK-1, SOURCE, PLAYBACK DECK-2
TAPE-TO-TAPE REPRINT	DECK-1 to -2, SOURCE RECORD, DECK-2 to -1
MUTING	NORMAL, −20dB
LOUDNESS	OUT, IN
LOW FILTER	OUT, IN
HIGH FILTER	OUT, IN
4-CH ADAPTOR	OUT, IN
N.R. ADAPTOR	OUT, IN
SPEAKER SELECTOR	POWER OFF, A, B, C, A+B, A+C

SEMICONDUCTORS 58 Transistors, 2 FET's, 32 Diodes (including 2 bridge-type diodes), 5 Zener Diodes

POWER REQUIREMENTS 100, 110, 117, 127, 220, 230, 240, 250V 50/60Hz

AC OUTLETS Switched type 2, total 100VA
Unswitched type 2, total 200VA

POWER CONSUMPTION

MAXIMUM CONSUMPTION	550VA
RATED CONSUMPTION	205W

DIMENSIONS 140mm (5 9/16″)H×500mm (19 11/16″)W×347mm (13 11/16″)D

WEIGHT 23.3kg (51.26 lbs)

Design and specifications subject to change without notice for improvements.

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